Naval Education and Training Command

NAVEDTRA 82701
April 1995
0503-LP-479-2900

Nonresident Training Course (NRTC)

Photography (Advanced)

Only one answer sheet is included in the NRTC. Reproduce the required number of sheets you need or get answer sheets from your ESO or designated officer.

PHOTOGRAPHY ADVANCED
NAVEDTRA 82701

Prepared by the Naval Education and Training Program Management
Support Activity, Pensacola, Florida

Congratulations! By enrolling in this course, you have demonstrated a desire to improve yourself and the Navy. Remember, however, this self-study course is only one part of the total Navy training program. Practical experience, schools, selected reading, and your desire to succeed are also necessary to successfully round out a fully meaningful training program. You have taken an important step in self-improvement. Keep up the good work.

HOW TO COMPLETE! THIS COURSE SUCCESSFULLY

ERRATA: If an errata comes with this course, make all indicated changes or corrections before you start any assignment. Do not change or correct the Training Manual (TRAMAN) or assignments in any other way.

TEXTBOOK ASSIGNMENTS: The TRAMAN for this course is *PHOTOGRAPHY (ADVANCED),* NAVEDTRA 12701. The TRAMAN pages that you are to study are listed at the beginning of each assignment. Study these pages carefully before attempting to answer the questions in the course. Pay close attention to tables and illustrations because they contain information that will help you understand the text. Read the learning objectives provided at the beginning of each chapter or topic in the text and/or preceding each set of questions in the course. Learning objectives state what you should be able to do after studying the material. Answering the questions correctly helps you accomplish the objectives.

BLACK DOT INFORMATION: Black dots (●) may be used in the text and correspondence course to emphasize important or supplemental information and to highlight instructions for answering certain questions. Read these black dot entries carefully; they will help you answer the questions and understand the material.

SELECTING YOUR ANSWERS: After studying the TRAMAN, you should be ready to answer the questions in the assignment. Read each question carefully, then select the BEST answer. Be sure to select your answer from the subject matter in the TRAMAN. You may refer freely to the TRAMAN and seek advice and information from others on problems that may arise in the course. However, the answers must be the result of your own work and decisions. You are prohibited from referring to or copying the answers of others and from giving answers to anyone else taking the same course. Failure to follow these rules can result in suspension from the course and disciplinary action.

SUBMITTING COMPLETED ANSWER SHEETS: Complete all assignments as quickly as possible to derive maximum benefit from the course. As a minimum, you must submit at least one assignment per month. This is a requirement established by the Chief of Naval Education and Training. Failure to meet this requirement could result in disenrollment from the course.

TYPES OF ANSWER SHEETS: If you are a U.S. Navy enlisted member on active duty or a drilling U.S. Naval Reserve enlisted member, you should use the answer sheet attached at the end of this course and follow the instructions in section A below. If you are an enlisted U.S. Naval Reserve member who is not attached to a drilling unit or if you are an officer, a civilian, or a member of the U.S. Army, Air Force, Marine Corps, or Coast Guard, you should use the Automatic Data Processing (ADP) answer sheets included in the course package and follow the instructions in section B.

A. Manually Scored Answer Sheets

If you are a U.S. Navy enlisted member on active duty or attached to a U.S. Naval Reserve drilling unit, your course will be administered by your local command. You must use the answer sheet designed for

get a supply of the forms from your Educational Services Officer (ESO), or you may reproduce the one in the back of this course booklet. DO NOT USE THIS FORM FOR COURSES ADMINISTERED BY NETPMSA.

Recording Information on the Manually Scored Answer Sheets: As you complete each assignment, submit the completed answer sheet to your ES0 for grading. You may submit more than one answer sheet at a time. Remember, you must submit at least one assignment each month.

Grading: Your ES0 will grade each answer sheet and notify you of any incorrect answers. The passing score for each assignment is 3.2. If you receive less than 3.2 on any assignment, the ES0 will list the questions you answered incorrectly and give you an answer sheet marked "RESUBMIT." You must redo the assignment and complete the RESUBMIT answer sheet. The maximum score you can receive for a resubmitted assignment is 3.2.

Course Completion: After you have submitted all the answer sheets and have earned at least 3.2 on each assignment, your command should give you credit for this course by making the appropriate entry in your service record.

Student Questions: If you have questions concerning the administration of this course, consult your ESO.

B. ADP Answer Sheets

If you are an enlisted U.S. Naval Reserve member who is not attached to a drilling reserve unit or if you are an officer, a civilian, or a member of the U.S. Army, Air Force, Marine Corps, or Coast Guard, use the ADP answer sheets provided in your course package. You should use one blank original ADP answer sheet for each assignment. Use only the original ADP answer sheet provided in your course package; NETPMSA will not accept reproductions.

Recording Information on the ADP Answer Sheets: Follow the "MARKING INSTRUCTIONS" on each answer sheet. Be sure that blocks 1, 2, and 3 are filled in correctly. This information is necessary for your course to be properly processed and for you to receive credit for your work.

As you work the course, be sure to mark your answers in the course booklet because your answer sheets will not be returned to you. When you have completed an assignment, transfer your answer from the course booklet to the answer sheet.

Mailing the Completed ADP Answer Sheets: Upon completing an assignment, mail the completed answer sheet to:

COMMANDING OFFICER
NETPMSA CODE 036
6490 SAUFLEY FIELD RD
PENSACOLA FL 32559-5000

Use envelopes to mail your answer sheets. You must provide your own envelopes or request them from your ESO. You may enclose more than one answer sheet in a single envelope. Remember, regardless *of* how many answer sheets you submit at a time, NETPMSA should receive at least one assignment a month.

NOTE: DO NOT USE THE COURSE COMMENTS PAGE AS AN ENVELOPE FOR RETURNING ANSWER SHEETS OR OTHER COURSE MATERIALS.

Grading: NETPMSA will grade the answer sheets and notify you by letter concerning your grade for each assignment, your incorrect answers, and your final grade. The passing score for each assignment is 3.2. If you receive less than 3.2 on any assignment, you must rework the assignment. NETPMSA will enclose a new ADP answer sheet in the letter notifying you of the questions you answered incorrectly. You will be required to redo the assignment and resubmit the new answer sheet. The maximum score you can receive for a resubmitted assignment is 3.2.

Course Completion: When you complete the last assignment, fill out the "Course Completion" form in the back of the course and enclose it with your last answer sheet. NETPMSA will issue you a letter certifying that you satisfactorily completed the course. You should make sure that credit for the course is recorded in your service record. YOU MAY RETAIN THE TEXT.

NOTE: YOUR OFFICIAL COURSE COMPLETION DATE WILL BE THE DATE YOUR LAST ASSIGNMENT IS PROCESSED THROUGH THE NFTPMSA ADP SYSTEM--NOT THE DATE YOU DEPOSIT THE LAST

ASSIGNMENT IN THE MAIL. This is especially important if you are taking the course for Naval Reserve retirement credit. You must mail your answer sheets at least 60 days before your anniversary date. This will provide you with enough time for delays in the mail or reworking failed assignments. DO NOT MAIL YOUR ASSIGNMENTS TO THE NAVAL RESERVE PERSONNEL COMMAND (NRPC).

Student Questions: Refer questions concerning this course to NETPMSA by mail (use the address on page ii) or by telephone: DSN 922-1366 or commercial (904) 452-1366.

NAVAL RESERVE RETIREMENT CREDIT

If you are a member of the Naval Reserve, you will receive retirement points if you are authorized to receive them under current directives governing retirement of Naval Reserve personnel. For the purpose of Naval Reserve retirement, this edition of the course is evaluated at 9 points. These points will be credited to you upon your satisfactory completion of the entire course.

NOTE: YOUR OFFICIAL COURSE COMPLETION DATE WILL BE THE DATE YOUR LAST ASSIGNMENT IS PROCESSED THROUGH THE NETPMSA ADP SYSTEM--NOT THE DATE YOU DEPOSIT THE LAST ASSIGNMENT IN THE MAIL. Refer to the Course Completion paragraph under section B. ADP Answer Sheets.

COURSE OBJECTIVES

In completing this Nonresident Training Course (NRTC), you will demonstrate knowledge of the subject matter by correctly answering questions on the following topics: Basic Photojournalism; Photographic Quality Assurance; Electronic Imaging: Aerial Photography; and Supply and Logistics.

Naval courses may include several types of questions--multiple-choice, true-false, matching, etc. The questions are not grouped by type but by subject matter. They are presented in the same general sequence as the textbook material upon which they are based. This presentation is designed to preserve continuity of thought, permitting step-by-step development of ideas. Not all courses use all of the types of questions available. The student can readily identify the type of each question, and the action required, by inspection of the samples given below.

MULTIPLE-CHOICE QUESTIONS

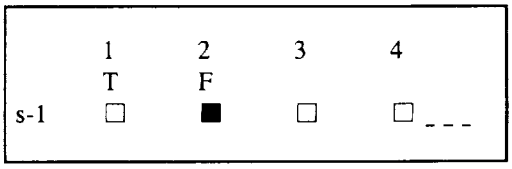
Each question contains several alternatives, one of which provides the best answer to the question. Select the best alternative, and blacken the appropriate box on the answer sheet.

SAMPLE

s-l. Who was the first person appointed Secretary of Defense under the National Security Act of 1947?

1. George Marshall
2. James Forrestal
3. Chester Nimitz
4. William Halsey

Indicate in this way on the answer sheet:



TRUE-FALSE QUESTIONS

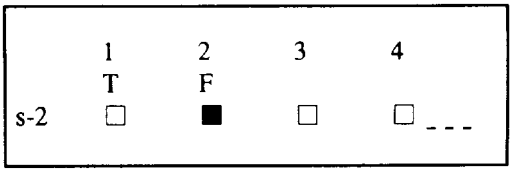
Mark each statement true or false as indicated below. If any part of the statement is false the statement is to be considered false. Make the decision, and blacken the appropriate box on the answer sheet.

SAMPLE

s-2. All naval officers are authorized to correspond officially with any systems command of the Department of the Navy without their respective commanding officer's endorsement.

1. True
2. False

Indicate in this way on the answer sheet:



MATCHING QUESTIONS

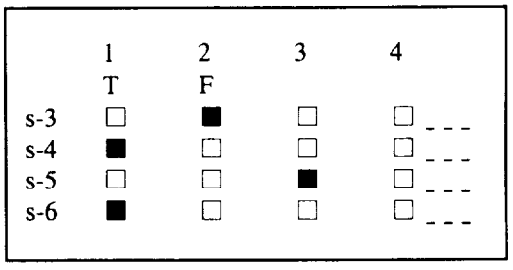
Each set of questions consists of two columns, each listing words, phrases or sentences. The task is to select the item in column B which is the best match for the item in column A that is being considered. Items in column B may be used once, more than once, or not at all. Specific instructions are given with each set of questions. Select the numbers identifying the answers and blacken the appropriate boxes on the answer sheet.

SAMPLE

In questions s-3 through s-6, match the name of the shipboard officer in column A by selecting from column B the name of the department in which the officer functions. Some responses may be used once, more than once, or not at all.

A. OFFICER	B. DEPARTMENT
s-3. Damage Control Assistant	1. Operations Department
s-4. CIC Officer	2. Engineering Department
s-5. Disbursing Officer	3. Supply Department
s-6. Communications Officer	

Indicate in this way on the answer sheet:



ASSIGNMENT 1

Textbook Assignment: "Basic Photojournalism" and "Photographic Quality Assurance." Pages 1-1 through 2-5.

Learning Objective: Identify the purpose of photojournalism.

1-1. Which of the following attributes is the most important requirement of a Navy photojournalist?

1. The ability to write good stories
2. The recognition for winning several photo contests
3. The skillful use of camera equipment
4. The application of state-of-the-art equipment

1-2. The assignments of Navy photojournalists involve only those subjects with great human interest value.

1. True
2. False

1-3. The assignments of a Navy photojournalist can be categorized into what two groups?

1. Spot news and feature pictures
2. News writing and photography
3. Photo layout and typesetting
4. Desktop publishing and prepress cropping

Learning Objective: Identify purposes of spot-news photographs.

1-4. Spot-news photographs involve current events while a feature assignment emphasizes human interest.

1. True
2. False

1-5. Which of the following factors is the most important for getting a spot-news photograph published?

1. Using interesting camera angles
2. Using dramatic lighting techniques
3. Providing black-and-white glossy prints
4. Providing an image that is newsworthy

1-6 Of the following elements, which one provides the stopping power for a photograph?

1. Newsworthiness
2. Human interest
3. Impact
4. Photographic quality

1-7 Which of the following techniques helps to create impact in a news photograph?

1. Using dramatic lighting
2. Recording peak action
3. Separating the subject from the background
4. Each of the above

1-8 It is important that photographs used for news purposes be free of all imperfections.

1. True
2. False

1-9 You are printing a photograph for reproduction in a newspaper or magazine. You should make the print so it has what contrast?

1. High
2. Low
3. Normal
4. It does not matter since the print will be reproduced as a half-tone image.

1-10 When possible, a photographic print that will be reproduced in a newspaper or magazine should be printed on what paper surface?

1. Glossy
2. Matte
3. Luster
4. Pearl

1-11. In a newspaper, the width of a column is approximately what number of inches?

1. 1
2. 2
3. 3
4. 4

Learning Objective: Recognize the purposes of feature pictures.

1-12. The first stage of a feature assignment should involve what process?

1. Preparing a shooting script
2. Cleaning the camera equipment
3. Arranging transportation
4. Conducting research

1-13. A feature picture serves which of the following purposes?

1. To inform
2. To entertain
3. To provoke a response
4. Each of the above

1-14. Which of the following statements pertaining to a feature picture is NOT true?

1. It should provide a clear message
2. It is critical for photographs to be published as quickly as possible
3. You can create a mood using various lighting techniques
4. YOU can control the composition of the subject

1-15. Which of the following practices helps to increase the impact of a feature picture?

1. Use various focal-length lenses
2. Use a normal lens only
3. Use a telephoto lens only
4. Use a wide-angle lens only

1-16. Which of the following camera angles is least likely to create the desired impact of your subject?

1. Low
2. Eye level
3. High

1-17. You are making a print for display in the quarterdeck area of your command. The photograph should be printed in what manner?

1. It should appear to have normal contrast and density when viewed under a viewing booth
2. It should appear to have normal contrast, but slightly lighter than normal
3. It should appear to have normal density, but the contrast should be slightly higher than normal
4. It should appear to have normal contrast and density when viewed from the location in which it is displayed

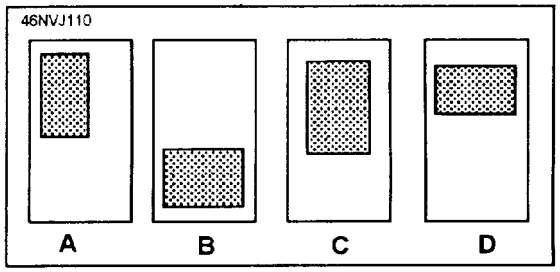


Figure 1A

IN ANSWERING QUESTION 1-18, REFER TO FIGURE 1A.

1-18. What print is positioned in the optical center of the mount?

1. A
2. B
3. c
4. D

Learning Objective: Identify procedures used to complete feature assignments.

1-19. A picture sequence is a series of photographs that centers around what number of subjects?

1. One
2. Two
3. Three

1-20. Which of the following methods of producing a picture sequence is the most dramatic?

1. Fixed camera and subject
2. Fixed camera, subject moves
3. Subject fixed, camera moves
4. Camera and subject move

1-21. A group of loosely related photographs that provides the reader with only a few miscellaneous impressions of an event is known as a picture

1. story
2. essay
3. sequence
4. feature

1-22. In an illustrated-text picture story, what is the primary tool of communication?

1. Words only
2. Photographs only
3. Words or photographs

1-23. In a picture-text combination, what is the primary tool of communication?

1. Words only
2. Photographs only
3. Words and photographs

1-24. What term is used to describe an arrangement of facts that you have collected during the development of your picture story?

1. Sorting
2. Sequencing
3. Treatment
4. Compiling

1-25. Of the following Navy picture-story topics, which one would probably be the most interesting to a large audience?

1. Ships
2. Aircraft
3. Weapons
4. Women

1-26. Once a shooting script is developed, YOU should never deviate from it?

1. True
2. False

1-27. What picture is most important in a picture story?

1. Lead
2. Body
3. Ending

1-28. In a picture story, a lead photograph serves what purpose(s)?

1. To create impact
2. To identify the subject matter
3. To instill desire within the viewer to know more about the subject
4. Each of the above

1-29. In a picture story, what is the second most important photograph?

1. Lead
2. Body
3. Ending

1-30. What is the primary purpose of the ending photograph in a picture story?

1. To cause the viewers to desire follow-up information on the subject
2. To provide the viewers with a conclusion
3. To encourage the viewers to change their opinion of the subject
4. To fill dead space in the lower right-hand corner of the layout

1-31. In a picture story, which, if any, of the following statements describe the purpose of cutlines?

1. To reinforce the text
2. To answer the five “Ws”
3. To bridge the gap between the text and the photographs
4. None of the above

1-32. Which of the following statements pertaining to a picture essay is true?

1. It may be subjective
2. It must have continuity
3. It should be based on facts
4. It must follow a logical order

1-33. Which of the following feature assignments permits the photographer to present his own personal point of view?

1. Picture story
2. Picture sequence
3. Feature picture
4. Picture essay

1-34. Which of the following photographic assignments is NOT entirely objective?

1. Picture story
2. Picture essay
3. Picture sequence
4. Feature picture

1-35. Which of the following statements pertaining to a picture essay is NOT true?

1. It is organized around a central theme
2. It is subjective
3. It has a definite plot
4. It does not have a well-defined beginning, middle, or ending

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Learning Objective: Recognize guidelines for submitting fleet hometown news (FHTN) photographs.

1-36. What is the primary purpose of FHTN releases?

1. To provide Sailors in the fleet with information about their hometowns
2. To provide the hometowns of military members with brief stories about military people
3. To provide military members with base closure listings in their hometown area
4. To provide hometowns across the nation with information on new weapon systems used by the fleet

1-37. Which of the following photographs should NOT be submitted with an FHTN story?

1. A formal portrait
2. An informal portrait
3. A portrait showing the subject in an embarrassing situation
4. A portrait showing the subject at work

1-38. A photograph intended for FHTN release should normally be presented in what format?

1. Vertical only
2. Horizontal only
3. Either vertical or horizontal

1-39. You should refer to what instruction for guidance concerning FHTN releases?

1. OPNAVINST 4790.4
2. OPNAVINST 5250.1
3. SECNAVINST 5500.4
4. SECNAVINST 5724.3

Learning Objective: Identify writing guidelines for a photojournalist.

1-40. When writing a news story, what should be your main objective?

1. To impress readers with your literary style
2. To impress upon the readers the importance of the subject
3. To provide readers with accurate, understandable information
4. To ensure the written text supports the photographs

1-41. In a news story, the climax is presented in what location?

1. At the beginning
2. In the body
3. At the end

1-42. In news writing, a sentence must not exceed what number of words?

1. 8
2. 12
3. 18
4. 30

1-43. When news writing, you should strive to write paragraphs in what manner?

1. So they contain as much information about the story as possible
2. So they contain no more than three sentences
3. So they express one complete thought
4. So they have a minimum of 60 words

1-44. In news writing, what component of a written article contains the most important facts?

1. Lead
2. Bridge
3. Body
4. Ending

1-45. What type of lead is used most commonly for news articles?

1. Novelty
2. Summary
3. Preface
4. Injunction

1-46. What novelty lead is the most unconventional?

1. Contrast
2. Shock
3. Direct address
4. Freak

1-47. In news writing, what is the purpose of a story bridge?

1. To provide most of the important facts
2. To smooth the transition between the lead and the body
3. To draw reader attention
4. To support the photographs used in the story

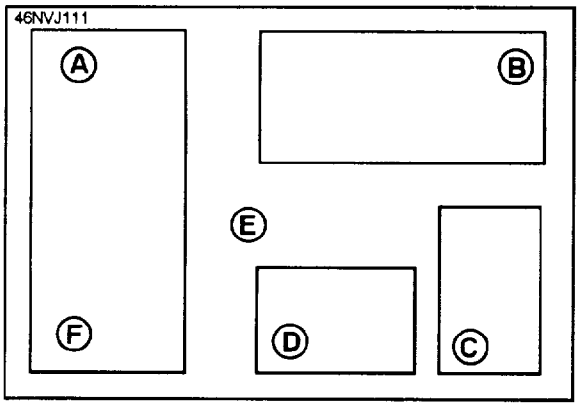

Figure 1B

IN ANSWERING QUESTION 1-48 AND 1-49, REFER TO FIGURE 1B.

1-48. The primary optical area is located in what area?

1. A
2. B
3. E
4. F

1-49. The eyes of a reader are least attracted to what areas of the layout?

1. A and B
2. A and C
3. B and F
4. C and D

1-50. On a layout, the dominant photograph should be the largest. Other photographs in the layout should not exceed what percentage of the dominate photograph?

1. 25%
2. 50%
3. 75%
4. 100%

Learning Objective: Identify the purpose of photographic quality assurance (QA).

1-51. Once established, photographic quality standards must be inflexible.

1. True
2. False

1-52. What is the ultimate goal of quality assurance in photography?

1. To reduce the time required to produce photographic products
2. To test photographic sensitized materials
3. To ensure maximum use of personnel and materials
4. To ensure the final photographic product is of high quality

1-53. The quality of a photographic product depends upon what three factors?

1. Human, material, and mechanical
2. Chemical, human, and mechanical
3. Chemical, time, and personnel
4. Equipment, personnel, and time

1-54. What category of personnel makes up the human element in a photographic QA program?

1. The photographer
2. The processing machine operator
3. The quality assurance technician
4. Each of the above

1-55. Your QA program consists solely of comparing prints to one another visually. What type of QA program are you operating?

1. Subjective
2. Objective
3. Reference standard
4. Sensitometric

1-56. What factor(s) of film contribute(s) the most toward high-quality photographs?

1. Storage
2. Handling
3. Exposure only
4. Exposure and processing

1-57. To ensure the workers in your imaging facility are following the instructions of the manufacturer when they process film, you should take what action?

1. Monitor the process continually
2. Supervise personnel constantly
3. Inspect each photograph produced personally

Learning Objective: Recognize the theory behind sensitometry.

1-58. A good quality assurance program is built on what type of foundation?

1. Subjectivity
2. Camera exposures
3. Sensitometry
4. Visual comparisons

1-59. In what way does sensitometry provide information about processing problems?

1. Scientific opinion
2. Personal judgment
3. Numbers
4. Subjective analysis

1-60. The photographic characteristics of light-sensitive materials are determined by what science?

1. Sensitometry
2. Densitometry
3. Chemical analysis
4. Logarithmic interpretation

1-61. You should use logarithms in which of the following situations?

1. When densitometers are used in producing transparencies
2. When plotting characteristic curves
3. When determining density, gamma, and log H
4. Each of the above

Learning Objective: Demonstrate basic understanding of logarithms and their uses.

1-62. What is the common logarithm of 100,000?

1. 1
2. 5
3. 3
4. 6

1-63. What is the common logarithm of 0.00001?

1. 1
2. -5
3. -1
4. 5

1-64. What is the common logarithm of 2?

1. 0.10
2. 0.20
3. 0.30
4. 0.40

1-65. What is the antilog of 0.78?

1. 87.0
2. 2.0
3. 6.0
4. -2.0

1-66. Logarithms are used to plot exposure on characteristic curves for which of the following reasons?

1. To reduce the numbers that indicate exposure to a manageable form
2. So both density and exposure are on the same scale
3. Both 1 and 2 above

Learning Objective: Identify transmission and light-stopping properties of photographic emulsions.

1-67. You are measuring the density of a negative with a light source of 100 meter-candles. The negative transmits 1.0 meter-candle. What is the transmission of the negative?

1. l/5
2. l/10
3. l/25
4. l/100

1-68. What is the opacity of a negative that transmits l/5 of the light that falls on it?

1. 5
2. 2
3. 7
4. 10

1-69. When 26 mc of light are falling onto a film, but only 7 mc of light are passed by the film, what percentage of the incident light is being transmitted?

1. 19%
2. 27%
3. 37%
4. 41%

1-70. What is the opacity of a negative that transmits 1 percent of the light that falls on it?

1. 100
2. 90
3. 40
4. 30

1-71. Density, the light-stopping ability of a photographic emulsion, is expressed by which of the following statements?

1. Logarithm of transmission
2. Logarithm of opacity
3. Reciprocal of opacity
4. Reciprocal of transmission

1-72. In sensitometry, you should be most concerned with what factor?

1. Incident light
2. Transmission
3. Opacity
4. Density

ASSIGNMENT 2

Textbook Assignment: "Photographic Quality Assurance." Pages 2-5 through 2-29.

Learning Objective: Identify the principles of sensitometry.

2-1. For which, if any, of the following reasons are sensitometers used to expose light-sensitive materials in a QA program?

1. They are easier to operate in complete darkness than a 35mm camera
2. They provide a known quantity and quality of light
3. They provide exact density readings
4. None of the above

2-2. In studying the characteristics of a light-sensitive material, you should use what instrument to make a series of graded exposures on the material being tested?

1. Densitometer
2. Sensitometer
3. Exposure meter
4. Wedge spectrograph

2-3. To determine the response characteristics of an emulsion under conditions that simulate actual photography, the light source of your sensitometer must meet which of the following conditions?

1. The color temperature of the light must be equivalent to that of the light used in practical photography
2. The time of exposure must be accurately controlled
3. The intensity of light must be known
4. All of the above

2-4. What is the approximate color temperature of an incandescent light source in a sensitometer?

1. 2400 K
2. 3200 K
3. 5400 K
4. 7000 K

2-5. What is the approximate color temperature of sunlight?

1. 2400 K
2. 3200 K
3. 5400 K
4. 7000 K

2-6. What is the purpose of the step tablet in a sensitometer?

1. It is used to produce a logarithmically graded series of exposures
2. It allows you to stack strips of film without damaging them
3. It controls the amount of voltage supplied to the light source
4. It lists the procedural steps for producing a sensitometric strip

2-7. What is the density difference between each step on an 11-step step tablet?

1. 1.00
2. 0.11
3. 0.15
4. 0.30

2-8. On a 21-step step tablet, there is a difference of what number of f/stops between each step?

1. 1
2. 2
3. l/2
4. l/3

2-9. You are preparing to process a control strip through a roller-transport processor. You should feed the control strip into the processor in what manner?

1. Low-density end first
2. High-density end first
3. It does not matter which end is fed first

2-10. You are using a sensitometer with a light source that supplies an exposure of 501 lux/seconds and a 21-step step tablet. The film step with the highest density receives what amount of exposure?

1. 4.80 log/lux seconds
2. 2.70 log/lux seconds
3. 2.65 log/lux seconds
4. 2.10 log/lux seconds

Learning Objective: Recognize steps used to plot characteristic curves.

2-11. What does the vertical axis represent on a characteristic curve?

1. Exposure
2. Gamma
3. Density
4. Contrast

2-12. What does the horizontal axis represent on a characteristic curve?

1. Exposure
2. Gamma
3. Density
4. Contrast

2-13. On a characteristic curve, an increase of exposure is indicated in what relationship?

1. From left to right
2. From right to left
3. From top to bottom
4. From bottom to top

2-14. What instrument is used to read the steps on a sensitometric strip?

1. Sensitometer
2. Wedge spectrograph
3. Exposure meter
4. Densitometer

2-15. At what location on a characteristic curve is step 1 of a sensi-strip plotted?

1. The lower right-hand corner
2. The lower left-hand corner
3. The upper right-hand corner
4. The upper left-hand corner

2-16. A characteristic curve that is drawn properly should have what appearance?

1. Straight lines connected to each plotted point
2. Very apparent angles
3. A single, smooth-flowing line
4. All points connected by curved lines

2-17. What type of information should you include on the graph of a characteristic curve?

1. The film type only
2. The developer type only
3. The processing temperature only
4. All of the above

Learning Objective: Identify information that can be derived from a characteristic curve.

2-18. Which of the following factors may be derived from an analysis of a characteristic curve?

1. Contrast
2. Effective speed
3. Useful exposure range
4. All of the above

● IN ANSWERING QUESTIONS 2-19 THROUGH 2-22, REFER TO THE FOLDOUT, FIGURE 2-6, AT THE BACK OF CHAPTER 2.

2-19. What is the lowest density recorded on the graph?

1. 1.00
2. 0.16
3. 0.10
4. 0.05

2-20. What is the highest density recorded on the graph?

1. 1.84
2. 2.10
3. 3.00
4. 4.50

2-21. What is the density at step ll?

1. 1.50
2. 1.19
3. 0.66
4. 0.40

2-22. What step(s) on the graph indicate(s) gross fog?

1. 1 only
2. 1 and 2 only
3. 3 and 4 only
4. 1, 2, 3, and 4

2-23. What section of a characteristic curve represents the shadow areas of a subject?

1. Toe
2. Straight line
3. Shoulder
4. Slope

2-24. What point on a characteristic curve indicates the least amount of exposure and produces a noticeable change in density?

1. The speed point
2. The inertia point
3. The threshold
4. The minimum useful density

2-25. What section has the greatest slope or gradient on a characteristic curve?

1. Toe
2. Straight line
3. Shoulder
4. Threshold

2-26. On a characteristic curve, what section indicates an equal change in density for an equal increase in exposure?

1. Toe
2. Straight line
3. Shoulder
4. Threshold

2-27. The bright, highlight tones of a subject are indicated on what portion of a characteristic curve?

1. Toe
2. Straight line
3. Shoulder
4. Threshold

2-28. At what section of a characteristic curve does the density decrease when there is an increase in exposure?

1. Toe
2. Straight line
3. Shoulder
4. Threshold

2-29. The range of exposures covered by the straight-line section of a characteristic curve is known by what term?

1. Emulsion latitude
2. Exposure latitude
3. Useful exposure range
4. Total exposure scale

2-30. As the contrast of a film increases, the emulsion latitude

1. increases
2. decreases
3. remains the same

2-31. You are determining the useful exposure range of a ground-pictorial film. What sections of a characteristic curve should you consider when making this determination?

1. Toe section only
2. Straight-line section only
3. Shoulder section only
4. Toe, straight-line, and shoulder section

2-32. For ground-pictorial film, the minimum useful density is at what point on a characteristic curve?

1. Gross fog
2. 0.10 above gross fog
3. 0.30 above gross fog
4. 90 percent of the maximum density

2-33. What term describes the margin of exposure error?

1. Exposure latitude
2. Speed point
3. Gamma infinity
4. Exposure range

2-34. Which of the following film and subject combinations provide the greatest exposure latitude?

1. Kodalith Ortho and a block diagram
2. Kodachrome 25 and a landscape scene
3. Kodacolor Gold 400 and a foggy seascape
4.

2-35. A film with which of the following IS0 speeds has the greatest exposure latitude?

1. 50
2. 100
3. 200
4. 400

Learning Objective: Demonstrate understanding of gamma and the way it is calculated.

2-36. The slope or gradient of the straight-line portion of a characteristic curve is determined by the relationship between a given log H interval and which of the following factors?

1. Useful exposure scale
2. Emulsion latitude
3. Total density range
4. Corresponding density difference

2-37. What range of gamma is desirable for negatives used to record ground-pictorial subjects?

1. 1.00 to 1.50
2. 1.20 to 2.40
3. 0.65 to 0.90
4. 0.60 to 2.40

2-38. What gamma provides an equal change of densities for an equal change of exposures in the straight-line section of a characteristic curve?

1. 1.00
2. 2.00
3. 0.30
4. 0.50

2-39. Which of the following symbols is used to indicate change or difference?

1. Alpha
2. Beta
3. Delta
4. Gamma

2-40. Determine the gamma of a negative using the following information. $H_1 \cdot H_2$ is equal to 2.00 and $D_1 \cdot D_2$ is equal to 1.00.

1. 1.00
2. 2.00
3. 3.00
4. 0.50

2-41. You are determining the gamma of a characteristic curve. ΔD is 0.65 and ΔH is 0.95. What is the gamma?

1. 1.00
2. 1.46
3. 0.68
4. 0.39

Learning Objective: Identify factors that affect the contrast of light-sensitive materials.

2-42. A negative may contain which of the following types of contrast?

1. Midtone
2. Highlight
3. Shadow
4. Each of the above

2-43. Other than personal preference, you should use what factor to determine the contrast-printing filter with which a black-and-white negative will print best?

1. Gamma
2. Contrast index
3. Total negative contrast
4. Emulsion latitude

2-44. You have processed several rolls of the same type of black-and-white negative film to the same gamma. After inspecting the negatives, you determine that all the negatives were exposed correctly. Therefore, you can assume that all of the negatives can be printed using the same contrast-printing filter.

1. True
2. False

2-45. Gamma can be considered as the ratio between what factors?

1. Scene brightness range and negative density
2. Scene contrast and negative contrast
3. Scene contrast and negative density
4. The shoulder and the toe of a characteristic curve

2-46. When film exposures extend into the toe section of the D-log H curve, what measurement should you use to measure the effects of exposure and development?

1. Contrast index
2. Gamma
3. pH
4. Specific gravity

2-47. You are taking aerial photographs of a ship that is under suspicion of transporting weapons illegally. What section of a characteristic curve should place the shadow areas of this subject?

1. Toe
2. Straight line
3. Shoulder

2-48. Which of the following contrast measurements does NOT take shadow and highlight densities into account?

1. Gamma
2. Contrast index
3. Total density range
4. Each of the above

2-49. Which of the following statements regarding gamma and contrast-index values of photographic materials is incorrect?

1. They are fixed values
2. They are not fixed values
3. The values fluctuate according to the developer being used
4. The values change according to the method of processing being used

2-50. With all other factors constant, a change in which of the following areas influences gamma or contrast index the greatest?

1. Exposure
2. Latitude
3. Light intensity
4. Development

2-51. Which of the following terms describes the point when gamma reaches its maximum level?

1. Gamma infinity
2. Gamma burnout
3. Gamma climax
4. Gamma reciprocation

2-52. Ground-pictorial film should be processed to which of the following contrast-index values?

1. 0.30
2. 0.58
3. 0.65
4. 0.90

IN ANSWERING QUESTION 2-53, REFER TO FIGURE 2-10.

2-53. To obtain a gamma of 0.60, you should process this film for what length of time?

1. 3 l/4 minutes
2. 3 l/2 minutes
3. 5 minutes
4. 4 minutes

Learning Objective: Identify the importance of a chemical quality assurance program.

2-54. Which of the following practices is probably the most important factor in a successful chemical quality assurance program?

1. Use extremely accurate modern scientific measuring devices
2. Take chemical samples and verify their properties on a daily basis
3. Keep equipment and work areas clean
4. Directly supervise the preparation of all photographic solutions

2-55. What is/are the proper method(s) for determining whether solutions are suitable for processing photographic images?

1. Check them for discoloration
2. Check them for sedimentation
3. Check them by chemical analysis
4. Each of the above

2-56. Before sampling a large batch of newly mixed developer, you should wait what minimum time before performing chemical analysis?

1. 5 minutes
2. 10 minutes
3. 30 minutes
4. 2 hours

2-57. You are drawing a chemical sample with a pipet from a color film processor. You should draw this sample from what depth of the tank?

1. As close to the surface as possible
2. About 1 inch below the surface
3. About 5 inches below the surface
4. From the bottom of the tank

2-58. You have drawn a solution sample to be analyzed, Before taking a pH measurement, you should shake the sample vigorously.

1. True
2. False

2-59. You should perform which of the following procedures before using a freshly mixed developer?

1. Complete chemical analysis
2. pH testing
3. Specific-gravity check
4. Both 2 and 3 above

2-60. When you take a pH measurement of a solution, the temperature of the solution is most critical when the pH is at which of the following values?

1. 10.00
2. 8.00
3. 7.00
4. 6.00

2-61. When multiple samples of the same solution are tested, you should standardize a pH meter at which of the following times?

1. Before every reading
2. After 15 minutes has elapsed only
3. After four readings only
4. After 15 minutes has elapsed or after four readings

2-62. You have taken a pH reading of four samples of the same developer solution. The readings were 9.38, 9.41, 9.47, and 9.71. What pH value should you record on the control chart?

1. 9.38
2. 9.41
3. 9.49
4. 9.71

2-63. You could use a specific gravity reading to verify which of the following chemical properties?

1. Dilution
2. Activity
3. Contamination
4. Shelf life

2-64. You have just plotted the gamma from a control strip and the plot exceeds the upper-control limit. Which of the following factors may have caused this condition?

1. Over-replenishment
2. Excessive agitation
3. Developer temperature too high
4. Each of the above

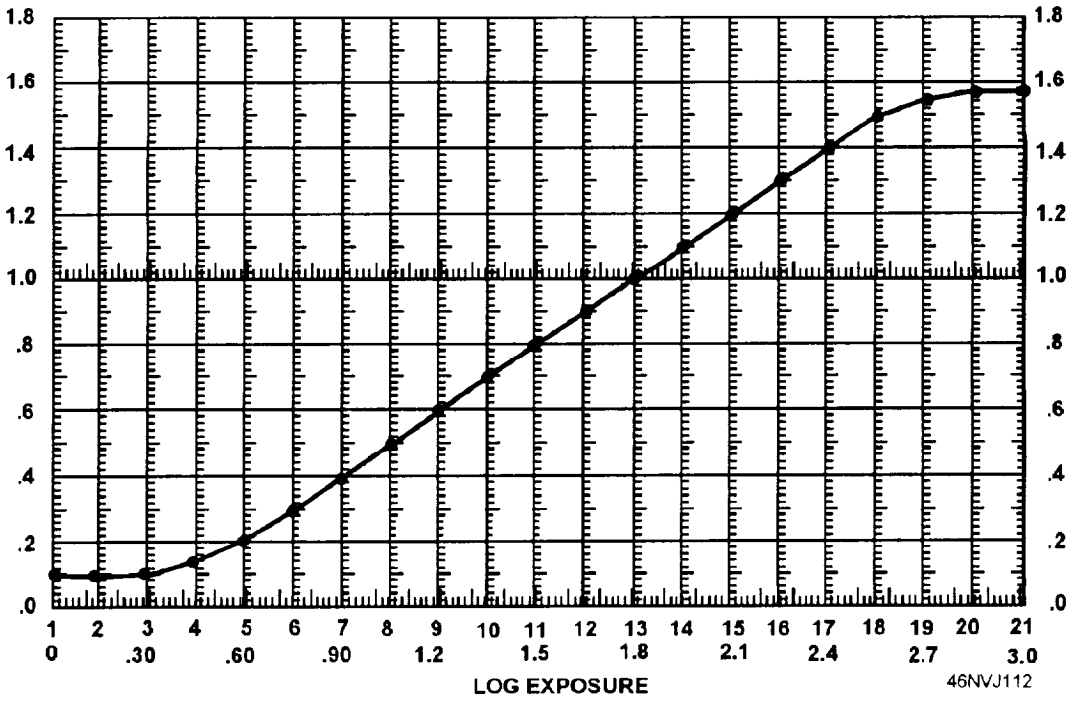

FIGURE 2A

IN ANSWERING QUESTIONS 2-65 AND 2-66, REFER TO FIGURE 2A.

Learning Objective: Identify characteristics of a D log-H curve.

2-65. What step best represents the speed point for ground-pictorial film?

1. 5
2. 11
3. 3
4. 18

2-66. What step best represents the speed point for an aerial film?

1. 1
2. 7
3. 5
4. 4

FIGURE 2B

IN ANSWERING QUESTION 2-67, REFER TO FIGURE 2B.

2-67. From what area of the control strip should you take a reading for gross fog?

1. A
2. B
3. c
4. D

Learning Objective: Recognize factors that may affect a process-control chart. (This objective is continued in assignment 3.)

2-68. Which of the following factors affect(s) gross fog?

1. Development
2. Age
3. Base thickness
4. All of the above

2-69. A process appears to be out of control but may not be. What is this situation called?

1. Variability
2. Deviation
3. Alpha risk
4. Beta risk

2-70. A process appears to be in control but may not be. What is this situation called?

1. Variability
2. Beta risk
3. Alpha risk
4. Deviation

2-71. What five process conditions can a control chart show?

1. Population, variability, deviation, standard error, and standard
2. Contrast index, high density, low density, speed point, and gamma
3. Jump, run, trend, out of control, and normal pattern
4. Gross fog, pH, temperature, fpm, and contrast

ASSIGNMENT 3

Textbook Assignment: "Photographic Quality Assurance," "Electronic Imaging," and "Aerial Photography." Pages 2-29 through 4-1.

Learning Objective (continued) : Recognize factors that may affect a process-control chart.

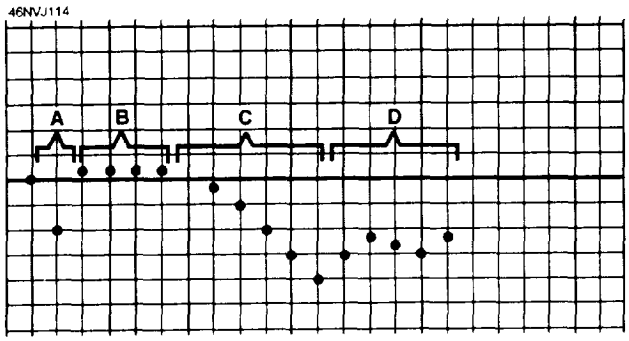

FIGURE 3A

IN ANSWERING QUESTION 3-1 THROUGH 3-4, REFER TO FIGURE 3A.

3-1. What segment represents a jump?

1. A
2. B
3. C
4. D

3-2. What segment represents a random pattern?

1. A
2. B
3. C
4. D

3-3. What segment represents a trend?

1. A
2. B
3. c
4. D

3-4. What segment represents a run?

1. A
2. B
3. c
4. D

3-5. You have just processed a control strip and the high-density reading plots above the upper-control limit. What action should you take first?

1. Check the calibration of the densitometer
2. Conduct a complete chemical analysis
3. Stop the process and change the chemicals
4. Review the chemical-mixing records

Learning Objective: Recognize procedures used in a color process-monitoring program.

3-6. What is the recommended temperature for storing color control strips?

1. 68°F to 75°F
2. 50°F to 68°F
3. 0°F to 32°F
4. 0°F or below

3-7. The manufacturer processes the reference strip that is included with each package of color control strips.

1. True
2. False

3-8. You are establishing a color process-monitoring chart. After processing five control strips, you read and average your data. Your readings exceed the aim values provided by the manufacturer but fall within the action limits. What action should you take?

1. Null the densitometer
2. Arbitrarily adjust the data so it falls on the mean
3. Apply the adjustment tolerances provided by the manufacturer
4. Disregard the data and process, read, and average five more control strips

3-9. One of your color process-monitoring charts indicates the past several plots are consistently drifting away from the aim value. Which of the following publications should you consult?

1. The Photo-Lab Index
2. Chapter 2 of this training manual
3. The appropriate process-monitoring manual
4. OPNAVINST 5290.1

Learning Objective: Identify various components of an electronic-imaging system.

3-10. Electronic imaging has what advantage(s) compared to conventional photography?

1. Images can be viewed faster
2. It is environmentally friendly
3. Images may be transmitted rapidly
4. All of the above

3-11. What component is the "brain" of a computer?

1. The keyboard
2. The CPU
3. The monitor
4. The software

3-12. What type of computer system is used in electronic imaging?

1. Special purpose
2. Graphical interface
3. Imaging specific
4. General purpose

3-13. What are the two major components of a computer system?

1. Hardware and software
2. CPU and output
3. Input and output
4. Peripherals and software

3-14. Of the following programs, which one is NOT application software?

1. WordPerfect
2. Adobe Photoshop
3. DOS
4. Harvard Graphics

3-15. Which of the following components is NOT a section of a CPU?

1. Control
2. Driver
3. Internal storage
4. Arithmetic logic

3-16. In a computer system, what component is used for primary storage?

1. Hard drive
2. Floppy disk
3. CPU
4. Magnetic tape

3-17. The electronic circuits etched on a silicon chip are known by what term?

1. Bit cell
2. Integrated circuitry
3. Large-scale integration
4. Input/output

3-18. Semiconductor storage does not possess which of the following advantages?

1. High reliability
2. Non-volatility
3. Low power consumption
4. Fast internal-processing speeds

3-19. What are the two classifications of primary storage?

1. Internal and external
2. Magnetic and floppy
3. ROM and RAM
4. Permanent and temporary

3-20. What type of memory is the working memory in a computer system?

1. RAM
2. ROM
3. WORM

Learning Objective: Identify methods in which information is transferred throughout a computer system.

3-21. Of the following peripherals, which one is an output device?

1. Keyboard
2. Scanner
3. Mouse
4. Monitor

3-22. Which of the following peripheral devices is connected to a simplex channel?

1. Keyboard
2. Scanner
3. Mouse
4. Printer

3-23. The signals that communicate information to control the back-and-forth flow of information between peripheral devices are known by what term?

1. Handshake
2. Stoppers
3. Interface
4. Controllers

3-24. What device is used to transmit data over long distances by converting digital signals to audio signals and vice versa?

1. Serial port
2. Communication port
3. Translator
4. Modem

Learning Objective: Recognize various uses of software.

3-25. What type of systems software controls the execution of other programs?

1. Assembler
2. Operating
3. Utility
4. Driver

3-26. What type(s) of systems software is/are used as language translators?

1. Assemblers Only
2. Compilers only
3. Assemblers and compilers
4. Utilities

3-27. What term describes software written to perform a specific function?

1. Systems
2. Application
3. Designer
4. Task specific

Learning Objective: Identify factors that affect the resolution of an electronic-imaging system.

3-28. What is the smallest picture element displayed on a computer monitor?

1. Raster
2. Byte
3. Bit
4. Pixel

3-29. What primary factor determines resolution of an electronic image?

1. The software
2. The number of pixels in a specific area
3. The color of the image
4. The brightness of the monitor screen

3-30. One advantage of electronic-imaging technology is that resolution is standardized for all input and output devices.

1. True
2. False

3-31. The process used to determine time when converting an analog waveform into a digital signal is called

1. digitizing
2. A/D conversion
3. sampling
4. quantitizing

3-32. The conversion of continuous values into distinct numeric values is called

1. digitizing
2. A/D conversion
3. sampling
4. quantitizing

3-33. What term(s) is/are used to describe the result of the combined process of sampling and quantitizing?

1. Digitizing
2. A/D conversion
3. Both 1 and 2 above

3-34. What term is used to describe the low, objectionable resolution of an electronic image on a display system?

1. Pixelation
2. Breakup
3. Softness
4. Grain

Learning Objective: Recognize characteristics of still-electronic cameras.

3-35. What factor is primarily responsible for the resolution capability of an electronic camera?

1. The storage medium
2. The camera interface
3. The speed of the lens
4. The size of the CCD

3-36. In the field mode, a still-video camera uses (a) what number of tracks per image and (b) can record what maximum number of images on a floppy disk?

1. (a) One (b) 25
2. (a) Two (b) 50
3. (a) One (b) 50
4. (a) Two (b) 25

3-37. In the frame mode, a still-video camera uses (a) what number of tracks per image and (b) can record what maximum number of images on a floppy disk?

1. (a) One (b) 50
2. (a) Two (b) 25
3. (a) One (b) 25
4. (a) Two (b) 50

3-38. A still-video camera uses what type of signal to record images?

1. Digital
2. Analog
3. VHF
4. UHF

3-39. Which of the following statements pertaining to still-video technology is NOT true?

1. Images must be converted from an analog to a digital format
2. Images require less memory than a still-digital image
3. It provides the lowest resolution of any of the electronic cameras
4. Images are captured directly in a digital format

3-40. Which of the following statements pertaining to still-digital technology is NOT true?

1. Images must be converted from an analog to a digital image
2. Images require more memory compared to still-video images
3. Images captured have higher resolution compared to still-video images
4. Images are captured directly in digital format

3-41. How does the effective focal length of the Kodak DCS compare to a conventional 35mm camera?

1. The effective focal lengths are identical
2. The effective focal length of the DCS is one-half of a conventional 35mm camera
3. The effective focal length of the DCS is twice that of a conventional 35mm camera
4. The effective focal light of the DCS is four times that of a conventional 35mm camera

Learning Objective: Identify characteristics of various peripheral devices used in electronic imaging.

3-42. What type of scanner is capable of providing the highest image quality?

1. Rotary drum
2. Flatbed
3. Film

3-43. What term(s) is/are used for images displayed on the screen of a computer monitor?

1. Bit mapped
2. Pixel oriented
3. Raster
4. All of the above

3-44. In reference to a computer monitor, what does the term "pitch" represent?

1. The size of the screen
2. The overall color cast of the displayed image
3. The size of a single pixel
4. The contrast of the displayed image

3-45. On a color CRT screen, what three colors compose a single pixel?

1. Yellow, magenta, and cyan
2. Black, yellow, and blue
3. Black, cyan, and yellow
4. Red, green, and blue

3-46. What term is used for the duplication of information in a digital file?

1. Redundancy
2. Compression
3. Reoccurrence
4. Repetition

3-47. As the compression ratio increases, what happens to the quality of the image?

1. It increases
2. It decreases
3. It remains the same

3-48. What maximum compression ratio can be used to provide a lossless compression?

1. 5:l
2. 2:l
3. 3:l
4. 4:l

3-49. What configuration(s) is/are used to pass information from the computer to the printer to ensure the image is placed properly on the paper?

1. RIP
2. PDL
3. Either 1 or 2 above
4. JPEG

3-50. On a thermal-dye transfer printer, a continuous-tone image is created in what way?

1. By blending gaseous color dyes released by donor ribbons and transferring them to the print material
2. By spraying dyes on the print material and then heating the dyes to make them permanent
3. By a series of tiny dots that are blended by heating the print material
4. By dye pigments in the print material that are released when heated

3-51. What type of printer provides the highest quality continuous-tone color image?

1. Inkjet
2. Color copier
3. Thermal-wax transfer
4. Thermal-dye transfer

3-52. When you are using graphical user-interface software, what element(s) of hardware is/are essential?

1. A mouse
2. A bit-mapped display
3. Both 1 and 2 above
4. A film scanner

3-53. When images are manipulated in the editing stage, changes to the original image can be detected readily on hardcopy?

1. True
2. False

Learning Objective: Identify the types of aerial photography. (This objective is continued in assignment 4.)

3-54. What does the acronym TARPS represent?

1. Total Air Reconnaissance Procurement System
2. Territorial Air Reproduction Photographic System
3. Tactical Air Reconnaissance Pod System
4. Target Arrangement and Reproduction Photo System

3-55. An aerial photograph taken from 1,300 feet is considered to be taken from what altitude?

1. Low
2. Medium
3. High

3-56. What are the three basic categories of aerial photography?

1. Reconnaissance, intelligence, and survey
2. Gunnery exercises, refueling at sea, and publicity
3. Construction progress, accident investigation, and ship identification
4. Vertical, oblique, and air-to-air

3-57. What category of aerial photography is made with the optical axis of the camera lens perpendicular to the ground?

1. Vertical
2. Oblique
3. Air-to-air
4. Reconnaissance

3-58. What category of aerial photography is made with the film plane of the camera parallel to the ground?

1. Oblique
2. Vertical
3. Air-to-air
4. Reconnaissance

3-59. What category of aerial photography is used to provide a uniform scale?

1. Reconnaissance
2. Oblique
3. Air-to-air
4. Vertical

ASSIGNMENT 4

Textbook Assignment: "Aerial Photography." Pages 4-2 through 4-32.

Learning Objective (continued): Identify the types of aerial photography.

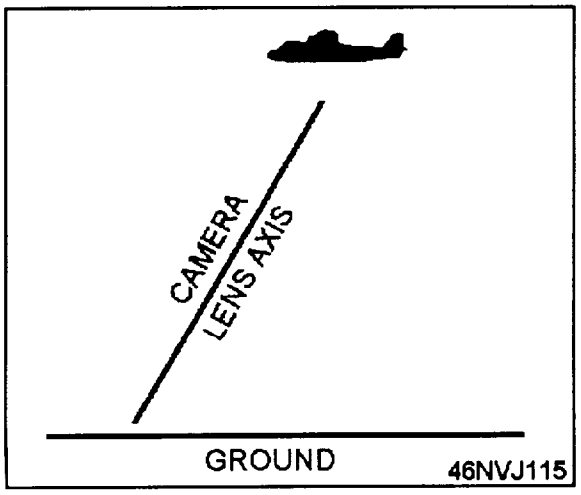

Figure 4A.

IN ANSWERING QUESTIONS 4-1 AND 4-2, REFER TO FIGURE 4A.

4-1. What is the approximate camera depression angle?

1. 60 degrees
2. 45 degrees
3. 20 degrees
4. 0 degrees

4-2. What is the approximate tilt angle?

1. 0 degrees
2. 30 degrees
3. 45 degrees
4. 65 degrees

4-3. What aerial photograph includes the horizon in the image?

1. Vertical
2. Low oblique
3. High oblique

4-4. What aerial photograph is used for orientation purposes?

1. High oblique
2. Low oblique
3. Vertical
4. Air-to-air

4-5. High-oblique photographs are made from high altitudes, while low-oblique photographs are made from low altitudes.

1. True
2. False

4-6. What type of aerial photography should be made of a small target when only one print is required?

1. Stereo
2. Mosaic
3. Strip
4. Pinpoint

4-7. What type of aerial photography should be used to make a series of overlapping photographs of a long, narrow highway?

1. Stereo
2. Mosaic
3. Strip
4. Pinpoint

4-8. What minimum number of views is required to produce a stereo effect from aerial photographs?

1. One
2. Two
3. Three
4. Four

4-9. One large photograph composed of several overlapping strips pieced together is known as what type of aerial photography?

1. Stereo
2. Mosaic
3. Strip
4. Pinpoint

4-10. Two photographs mounted and ready for stereo viewing are known by what term?

1. Stereo
2. Stereopair
3. Stereogram
4. Stereoset

4-12. What type of aerial photography is used to make maps or charts?

1. Reconnaissance
2. Intelligence
3. Cartographic
4. Mosaic

Learning Objective: Recognize applications of TARPS.

QUESTIONS 4-13 THROUGH 4-19 INVOLVE TARPS.

4-13. It is designed for use with what type of aircraft?

1. P-3
2. C-130
3. F-18
4. F-14

4-14. What number of photographic sensors are used in a full configuration?

1. One
2. Two
3. Three
4. Four

4-15. What person controls camera operation?

1. The Photographer's Mate
2. The pilot
3. The naval flight officer
4. The aircrewman

4-16. The panoramic camera is in what area of the pod?

1. Center
2. Front
3. Rear
4.

4-17. The frame camera is capable of what number of positions?

1. One
2. Two
3. Three
4. Four

4-18. The infrared reconnaissance set is in what location?

1. Front
2. Center
3. Rear

4-19. What official normally originates the requirement for EEI reconnaissance?

1. The Commander, Naval Intelligence
2. The Secretary of the Navy
3. The Director of Special intelligence
4. The Task Force Commander

Learning Objective: Identify film and filter combinations used for aerial photography.

4-20. What type of aerial camera is designated KE?

1. Reconnaissance
2. Mapping
3. Scope recording
4. Still picture

4-21. What weather phenomena causes haze by concentrating and trapping particles in the air?

1. Temperature inversion
2. Thermal shimmer
3. Thermal convection

4-22. What photographic filter is most effective for cutting through haze?

1. Blue
2. Green
3. Red
4. Yellow

4-23. What type of film reproduces the most ground detail through haze?

1. Tech. Pan
2. Infrared
3. Kodacolor
4. Ektachrome

4-24. While viewing a black-and-white aerial photograph, you notice the vegetation in the image appears white. What is the most reasonable explanation for this occurrence?

1. Vegetation always appears white in black-and-white aerial images
2. Heavy haze existed when the photographs were taken and prevented green light from reaching the camera
3. Color film was used to make the pictures, and it was developed in a black-and-white developer
4. Infrared film was used to make the images

4-25. What color filter should you use to expose IR black-and-white film?

1. Red
2. Green
3. Blue
4. Yellow

4-26. What color filter should you use to expose color IR film?

1. Red
2. Green
3. Blue
4. Yellow

4-27. You should NOT develop Kodak Ektachrome film in which of the following processes?

1. E-6
2. ME-4
3. EAR-5
4. E-4

4-28. What color filters are used to control haze in aerial photography?

1. Green and blue
2. Red and green
3. Blue and yellow
4. Yellow and red

4-29. In black-and-white aerial photography, which of the following filters provides the greatest haze penetration?

1. No. 8
2. No. 15
3. No. 25
4. No. 2B

Learning Objective: Recognize procedures used for taking aerial photographs.

4-30. You are taking a low-oblique aerial photograph from a high altitude. What is the best method for determining your camera exposure setting?

1. Take a light meter reading from the ground before boarding the aircraft and use this setting
2. Use the substitution method by using a light meter reading from a gray aircraft engine or wing
3. Take an air-to-ground light meter reading and use this setting
4. Set the aperture to f/5.6 and do not vary from this setting

4-31. You are using a map with a scale of 1:15,000. Therefore, 1 inch on the map represents what number of feet on the ground?

1. 1,250
2. 5,000
3. 7,500
4. 15,000

4-32. What is the scale of an image shot from an altitude of 10,000 feet with a camera having a 3-inch focal-length lens?

1. 1:10,000
2. 1:20,000
3. 1:30,000
4. 1:40,000

4-33. You should have what percentage of overlap between exposures when taking aerial photographs for a strip?

1. 20%
2. 40%
3. 60%
4. 80%

4-34. When overlapping aerial photographs for a mosaic map, you should use what section of each photograph?

1. The center 40 percent
2. The center 60 percent
3. The outer 40 percent
4. The outer 60 percent

4-35. When you are making mosaic maps, what is the side lap between each strip?

1. 20 percent
2. 40 percent
3. 60 percent
4. 80 percent

Learning Objective: Demonstrate the calculations necessary for an aerial mapping mission.

IN ANSWERING QUESTIONS 4-36 THROUGH 4-48, USE THE FOLLOWING INFORMATION:

a. An area to be mapped photographically is 15 nautical miles north and south by 25 nautical miles east and west.

b. Forward overlap required is 60 percent; side lap 40 percent.

C. Photography scale is 1:17,000.

d. Camera lens focal length is 7 inches; film format is 4.5 by 4.5 inches.

e. Aircraft airspeed is 320 knots. There is no wind.

f. Ground coverage per shot is 6,400 feet.

g. Scale of mission planning chart is 1:40,500.

4-36. What altitude is required for this mapping mission?

1. 23,800 feet
2. 15,950 feet
3. 10,000 feet
4. 5,950 feet

4-37. At the required scale, 1 inch on the negative represents what number of feet on the ground?

1. 313 feet
2. 1,417 feet
3. 3,750 feet
4. 9,955 feet

4-38. The image of a building on the negative measures 1.75 inches long. What is the actual length of the building?

1. 1,452 feet
2. 2,489 feet
3. 3,750 feet
4. 4,800 feet

4-39. With the required overlap, what is the GGF?

1. 640 feet
2. 1,280 feet
3. 2,560 feet
4. 5,120 feet

4-40. With the required overlap, what is the GGS?

1. 1,840 feet
2. 2,840 feet
3. 3,840 feet
4. 4,840 feet

4-41. In what direction should the aircraft fly?

1. North only
2. North or south
3. East only
4. East or west

4-42. The area being photographed is what number of feet (a) long and (b) wide?

1. (a) 152,000 (b) 91,200
2. (a) 262,000 (b) 92,400
3. (a) 363,000 (b) 93,800
4. (a) 462,000 (b) 94,600

4-43. What number of photographs is required per flight strip?

1. 59
2. 60
3. 64
4. 66

4-44. What total number of flight strips is required?

1. 15
2. 25
3. 35
4. 45

4-45. What total number of photographs is required?

1. 1,600
2. 2,600
3. 3,600
4. 4,600

4-46. You should draw the flight lines what distance apart on the planning chart?

1. 1.13 inches
2. 2.26 inches
3. 3.72 inches
4. 4.40 inches

4-47. What is the required interval between exposures, in seconds?

1. 1.1
2. 2.3
3. 3.5
4. 4.7

4-48. What number of inches on the mosaic map represents 1,000 feet on the ground?

1. 0.70
2. 0.90
3. 1.10
4. 1.30

Learning Objective: Identify procedures used to compose aerial photography.

4-49. When shooting an aerial assignment, it is important for you to communicate with the pilot at which of the following times?

1. During preflight
2. During flight
3. During postflight
4. Each of the above

4-50. When composing an aerial photograph, you have the most control over which of the following factors?

1. Subject placement
2. Lighting
3. The moment the picture is shot
4. Camera-to-subject distance

4-51. What are the "picture areas" of a low-oblique photograph?

1. Foreground, target area, background, and sky
2. Foreground, target area, and background
3. Target area, background, and sky

4-52. When shooting a high-oblique aerial photograph, you should divide the image area into what number of sections to achieve proper composition?

1. One
2. Two
3. Three
4. Four

4-53. Which of the following actions should you take to reduce image blurring caused by camera movement?

1. Have the pilot reduce the throttle
2. Use a fast shutter speed
3. Prevent your upper body and camera from touching the aircraft
4. All of the above

4-54. Which of the following lenses should you select for taking an air-to-air photograph of an F-18?

1. 135mm
2. 50mm
3. 25mm
4. 15mm

ASSIGNMENT 5

Textbook Assignment: "Aerial Photography" and "Supply and Logistics." Pages 4-33 through 5-30.

Learning Objective: Identify uses for maritime surveillance photography.

5-1. Of the following rigs, which one is NOT a basic rigging pattern for maritime surveillance photography?

1. Special interest
2. Full
3. Modified full
4. Normal standard

5-2. What view of a ship provides information as to the length of the ship?

1. Bow quarter
2. Beam
3. Stern quarter
4. Stern

5-3. What maritime surveillance photographic rig should you use to photograph a "never before seen" potential enemy ship?

1. Special interest
2. Quick
3. Normal standard
4. Full

5-4. A quick rig consists of what number of views?

1. One
2. Two
3. Three
4. Four

5-5. You are using a 16mm motion-picture camera for shooting an aerial mission. Which of the following fps rates should you use?

1. 12 fps
2. 16 fps
3. 24 fps
4. 48 fps

Learning Objective: Recognize aerial film processing procedures.

5-6. What document provides you with the necessary processing information to make preparations for processing TARPS film?

1. Mission planning form
2. Maintenance action form
3. Photographic job order

5-7. Which of the following personnel are responsible for preparing TARPS sensors for a mission?

1. Photo lab
2. CVIC
3. Line maintenance
4. Mission planning

5-8. You are evaluating TARPS film exiting the dryer section of a processor. You notice a dark spider-weblike pattern on several of the frames. What is the most probable cause of this defect?

1. Shutter banding
2. Vacuum malfunction
3. Camera light leak
4. Static electricity

5-9. What portion(s) of the characteristic curve should you use to duplicate aerial film?

1. Straight line only
2. Straight line and shoulder only
3. Straight line and toe only
4. Straight line, shoulder, and toe

5-10. The trigradient tone reproduction method of duplicating aerial film is based on what number of tone-control curves?

1. One
2. Two
3. Three
4. Four

Learning Objective: Recognize elements of the Navy supply system and their relative importance.

5-11. Within the Navy, there are what number of stock points for the Navy Supply System?

1. Nine
2. Eight
3. Seven
4. Six

5-12. What does the acronym "FISC" represent?

1. Federal Inquiry Service Center
2. Federal Industrial Supply Center
3. Fleet Investigative Service Command
4. Fleet and Industrial Supply Command

5-13. Which of the following organizations provides the majority of office supplies to the Navy?

1. ASO
2. DLA
3. GSA
4. ISO

Learning Objective: Identify elements of a national stock number.

5-14. What is the FSC number for a still-picture camera?

1. 6710
2. 6720
3. 6730
4. 6750

5-15. What is the FSC number for a roller-transport film processor?

1. 6710
2. 6720
3. 6730
4. 6740

5-16. A national stock number contains what number of digits?

1. Nine
2. Seven
3. Five
4. Four

5-17. What number of characters make up a Navy item control number?

1. 20
2. 15
3. 13
4. 7

5-18. Material that is stocked at a Navy stock point but not in the Federal Catalog System is assigned what type of identification number?

1. Navy item control
2. Local item control
3. Material control code
4. Special material identification Code

5-19. The material identification number 6720-LL-791-9296 is what type of number?

1. Navy item control
2. Local item control
3. Material control code
4. Special material identification code

Learning Objective: Recognize publications used for supply requisitions.

5-20. To cross-reference a manufacturer's part number for a camera mechanism to an NSN, you should consult what publication?

1. *Management List-Navy*
2. *Afloat Shopping Guide*
3. *Consolidated Master Cross-Reference List*
4. *Photographic Equipment List*

5-21. To order Navy publications for your imaging facility, you should consult which of the following references?

1. *Naval Imaging Management and Operations Manual*
2. *Manual of Naval Photography*
3. *DoD Consolidated Federal Supply Catalog*
4. *Navy Stock List of Publications and Forms*

5-22. As a Photographer’s Mate, you will use what part of the *Navy Stock List* the most?

1. ASO E-6789
2. C-0001
3. P-2002
4. 00-35QP

5-23. What volume of the *GSA Supply Catalog* contains current prices for NSN items?

1. 1
2. 2
3. 3
4. 4

5-24. The "I Cog Catalog" has what NAVSUP number?

1. C-0001
2. E-6789
3. P-2002
4. 00-35QP

5-25. What section of NAVSUP P-2002 provides an alphabetic listing of publications and forms?

1. I
2. II
3. III
4. IV

5-26. Current microfiche editions of NAVSUP P-2002 are issued at what intervals?

1. Annually
2. Semiannually
3. Quarterly
4. Monthly

5-27. What type of number should be used by purchasing officers to ensure that all of the requirements for a particular type of material are met?

1. Specification
2. Drawing
3. Identification
4. I cog

5-28. What source provides an illustrated parts breakdown (IPB) for equipment used in an imaging facility?

1. The Navy Supply Depot
2. The Naval Media Center
3. The ASO
4. The manufacturer

Learning Objective: Recognize documents and procedures required for procuring supply items.

5-29. What supply-computerized system is used aboard aircraft carriers?

1. SNAP I
2. SNAP II
3. UADPS

5-30. What document is used to purchase open-purchase items in a computerized-supply system?

1. DD Form 1149
2. DD Form 1250-l
3. DD Form 1250-2
4. DD Form 1348

5-31. What form is used as a shipping and invoice document?

1. DD Form 1149
2. DD Form 1250-l
3. DD Form 1250-2
4. DD Form 1348

5-32. What action takes place when a material obligation validation (MOV) request is neglected?

1. The requisition is placed on back order
2. The requisition is canceled
3. The requisition is resubmitted automatically
4. A double order of the requisition results

5-33. You have ordered 400 rolls of 35mm film. However, the supply point only shipped 380 rolls and canceled the remainder of the order. What term applies to this transaction?

1. Exception status
2. Cancellation
3. Material obligation validation
4. One-hundred percent supply status

5-34. What is the UND of a routine requisition?

1. A
2. B
3. C
4. D

5-35. Your command is assigned an F/AD of III. A routine requisition has what priority?

1. 03
2. 06
3. 11
4. 13

5-36. What MILSTRIP publication covers procedures afloat?

1. NAVSUP P-437
2. NAVSUP P-485
3. NAVSUP P-1149
4. NAVSUP P-1348

5-37. What type of requisition is used to "buy" material from SERVMART?

1. A procurement requisition
2. A SERVMART chit
3. An MVO

5-38. Which of the following forms may be used for requisitioning material from SERVMART?

1. DD Form 1149
2. DD Form 1250/9-1
3. DD Form 1348
4. Either 2 or 3 above

5-39. What form is used to order Navy departmental directives?

1. DD Form 1149
2. DD Form 1205
3. DD Form 1250/9-1
4. DD Form 1348

5-40. What document identifier is assigned to a requisition follow-up?

1. AF1
2. A1F
3. 1AF
4. FA1

5-41. What maximum dollar amount may be expended from an imprest fund for emergency purchases?

1. $150
2. $300
3. $1,000
4. $2,500

Learning Objective: Identify procedures used for conducting inventory of supplies and controlled equipage.

5-42. What NAVSUP form should be used to reflect the current inventory of stock on hand?

1. NAVSUP 10700
2. NAVSUP 1348
3. NAVSUP 1149
4. NAVSUP 1114

IN ANSWERING QUESTIONS 5-43 THROUGH 5-45, USE THE FOLLOWING INFORMATION.

Your imaging facility uses 75 rolls of a given film per month. The safety level is 4 months, while the stocking objective is 6 months. The order and shipping time is 1 month.

5-43. What is the operations level in (a) months and (b) number of rolls of film?

1. (a) 2 (b) 100
2. (a) 3 (b) 150
3. (a) 2 (b) 150
4. (a) 3 (b) 100

5-44. What is the high level in the number of (a) rolls of film and (b) months?

1. (a) 525 (b) 7
2. (a) 500 (b) 5
3. (a) 525 (b) 5
4. (a) 500 (b) 7

5-45. What is the low limit for number of rolls of film?

1. 400
2. 375
3. 350
4. 325

5-46. A projection enlarger is in what classification of plant property?

1. 1
2. 2
3. 3
4. 4

5-47. What are the NAVSUP form numbers for "custody cards"?

1. 1348 and 1149
2. 1114 and 767
3. 766 and 306
4. 460 and 306

5-48. What individual within a command is responsible for maintaining the original custody cards?

1. The supply officer
2. The division officer
3. The production petty officer
4. The supply petty officer

5-49. Once it has begun, a controlled-equipage inventory must be completed within what number of days?

1. 7
2. 14
3. 30
4. 60

5-50. What is the ultimate goal of the MLSR program?

1. To recover stolen property
2. To improve physical security
3. To identify the individual accountable
4. To replace lost property

5-51. You should refer to what instruction for guidance pertaining to the MLSR program?

1. SECNAVINST 5510.1
2. SECNAVINST 5500.4
3. OPNAVINST 5290.1
4. NAVSUPINST 1114.1

5-52. What form should be used to prepare an MLSR report?

1. SF-364
2. SF-361
3. NAVSUP Form 766
4. DD Form 200

5-53. What individual is responsible for initiating a Report of Survey?

1. The supply petty officer
2. The leading chief petty officer
3. The commanding officer
4. The officer accountable

5-54. Which of the following individuals can NOT be appointed as a financial liability officer?

1. A commissioned officer
2. A warrant officer
3. A master chief petty officer
4. An accountable officer

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(Refer to instructions in front of course)

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